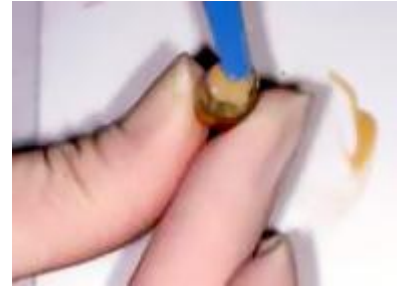


## Post-Operative Sensitivity with Luting Cements (8/04)

Hilton T, Hilton D, Randall R, Ferracane JL. A clinical comparison of two cements for levels of post-operative sensitivity in a practice-based setting. *Oper Dent* 2004;29:241-248.

The purpose of this study was to compare the post-operative sensitivity resulting from the cementation of all-metal or metal-ceramic crowns with either conventional (Fuji I, GC America) or resin-modified glass-ionomer (Rely X, 3M ESPE) luting agents. Ten private practitioners prepared and cemented 209 crowns. Patients were surveyed at 24 hours, one week, one month, and three months post-cementation for any evidence of temperature or biting sensitivity. Fifty percent of patients reported some sensitivity. However, overall sensitivity scores were low throughout the duration of the study. Mean sensitivity for all patients on a 10-point scale was 0.52 for temperature and 0.23 for biting. **No significant differences in cold, heat, or biting sensitivity over time was found for either cement. All-metal crowns demonstrated greater temperature sensitivity compared to metal-ceramic crowns. Younger patients experienced greater sensitivity to cold, heat, or biting. Increased dentin-preparation area was associated with greater cold sensitivity.**



**DIS Comment:** Sensitivity following the cementation of crowns has been observed, however, it is typically reported to be only mild to moderate in intensity and rarely results in endodontic therapy.<sup>1,2</sup> The type of cement apparently has only a minor impact on post-operative luting sensitivity. Clinical studies have found that zinc phosphate and conventional glass-ionomer cements perform similarly with comparable post-operative sensitivity.<sup>1,2</sup> Resin-modified glass-ionomer cements retain the benefits of conventional glass ionomers (i.e., fluoride release, chemical adhesion) without the disadvantages of lower initial pH and higher solubility found with both conventional glass-ionomer and zinc-phosphate cements. The authors speculate that the hydrodynamic theory is responsible for the correlation between post-operative sensitivity and crown type, patient age, and dentin-preparation area. All-metal crowns transmit temperature changes more rapidly than metal-ceramic. Increasing the dentin-preparation area increases the number and volume of dentinal tubule exposure. Finally, older patients have more sclerotic and tertiary dentin formation that may potentially reduce dentinal fluid flow.

### References

1. Johnson GH, Powell LV, DeRouen TA. Evaluation and control of post-cementation pulpal sensitivity: Zinc phosphate and glass ionomer luting cements. *J Amer Dent Assoc* 1993;124:38-46.
2. Jokstad A, Mjor IA. Ten years' clinical evaluation of three luting cements. *J Dent* 1996;24:309-315.